

Mastering Ansible

Jenkins Pipeline



Table of Contents

Exercise Steps	3
Scenario	3

Exercise Steps

Scenario:

In this activity, we will cover how to run a playbook by integrating Ansible with Jenkins.

Prerequisite:

- a. The source code is available in Gitlab. You can download it by using the URL : [GitHub - vishnukiranreddy4/ansiblerepo](https://github.com/vishnukiranreddy4/ansiblerepo)

Walkthrough:

1. Install Ansible Plugin
2. Create a Pipeline Job in Jenkins
3. Configure the Job with Jenkinsfile and execute build

Activity 1	
1	<p>Login to GitHub and fork the below project. https://github.com/vishnukiranreddy4/ansiblerepo.git</p> <p>Note: Once you fork the project update your repository URL in Jenkinsfile.txt of master branch.</p> <pre>15 lines (15 sloc) 339 Bytes 1 pipeline { 2 agent any 3 stages { 4 stage('Get_Playbook') { 5 steps { 6 git 'https://github.com/vishnukiranreddy4/ansiblerepo.git' 7 } 8 } 9 stage('Run_Playbook') { 10 steps { 11 sh 'ansible-playbook playbook.yml' 12 } 13 } 14 } 15 }</pre>
2	<p>Access Jenkins Dashboard using the URL http://localhost:8080</p> <p>Username: admin Password: admin</p>
3	<p>Go to Manage Jenkins → Manage Plugins</p>

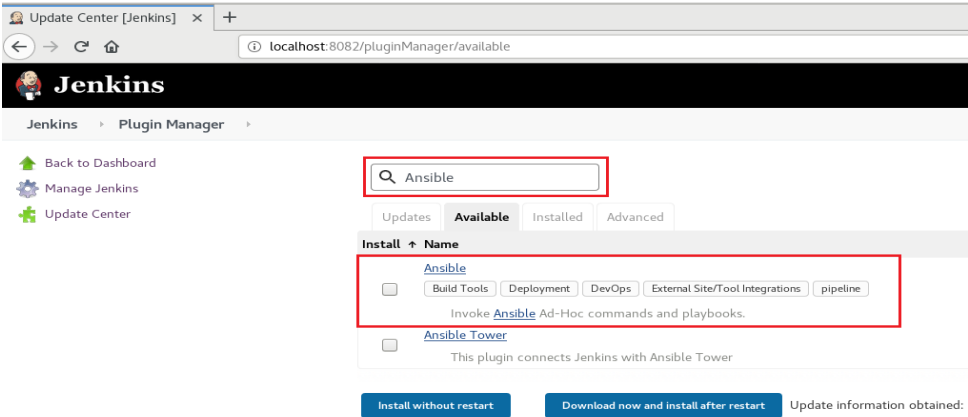
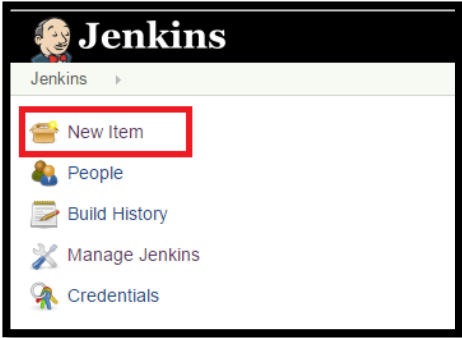
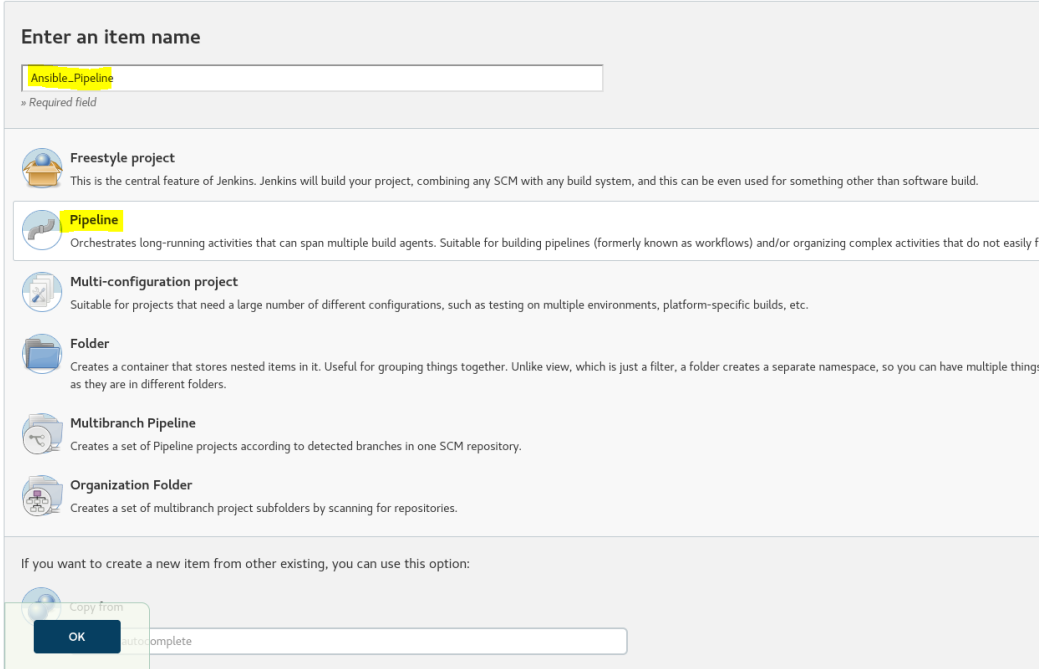
The image shows the Jenkins Dashboard interface. At the top, there's a navigation bar with the Jenkins logo, a search bar, and user information (admin, log out). The left sidebar contains a list of links: New Item, People, Build History, Manage Jenkins (highlighted with a red box), My Views, Lockable Resources, and New View. The main content area has a 'Welcome to Jenkins!' message with two buttons: 'Create an agent or configure a cloud' and 'Create a job'. Below this, there's a 'Build Queue' section showing 'No builds in the queue' and a 'Build Executor Status' section showing two executors. At the bottom right, it says 'Page generated: Aug 9, 2020 9:29:51 PM IST REST API Jenkins 2.235.3'.

The image shows the 'Manage Jenkins' page. It has a title 'Manage Jenkins' and a subtitle 'System Configuration'. There are several icons representing different configuration options: 'Configure System' (gear icon), 'Global Tool Configuration' (wrench icon), 'Manage Plugins' (puzzle piece icon, highlighted with a red box), and 'Manage Nodes and Clouds' (server rack icon). Below these, there's a 'Security' section with icons for 'Configure Global Security' (lock icon), 'Manage Credentials' (key icon), 'Configure Credential Providers' (key icon), and 'Manage Users' (people icon).

4 Click on **Available** tab as highlighted in the below image –

The image shows the 'Available' tab in the Jenkins plugin manager. The 'Available' tab is highlighted with a red box. Below the tabs, there's a search bar and a table with columns: Install, Name, Version, and Released. Below the table, there's a message: 'Use the search field above to search for available plugins.' At the bottom, there are three buttons: 'Install without restart', 'Download now and install after restart', and 'Check now'. The text 'Update information obtained: 2 hr 39 min ago' is also visible.

5 Search and install **Ansible** plugin as shown in the below image. After every plugin installation, click on **Install without restart** button –

	
6	<p>Select New Item from the menu as highlighted in the below image:</p> 
7	<p>a. Type the job name as 'Ansible_Pipeline' in the Enter an item name field and select Pipeline Project as the project type as shown below:</p> <p>b. Click OK to create job.</p>  <p>This action leads to the Project Configuration page, where you can configure settings for build activity.</p>
8	<p>To configure job with GitHub project, perform the following tasks:</p> <p>a. In the Project Configuration page, under the General tab, type the details in the Description field</p>

	<div> <div>Ansible_Pipeline ▾ ▸</div> <div> <div>General Build Triggers Advanced Project Options Pipeline</div> <div>Description</div> <div>Executing Ansible Playbook through Pipeline script</div> <div>[Plain text] Preview</div> <div> <input type="checkbox"/> Discard old builds ? <input type="checkbox"/> Do not allow concurrent builds <input type="checkbox"/> Do not allow the pipeline to resume if the controller restarts <input type="checkbox"/> GitHub project <input type="checkbox"/> Pipeline speed/durability override ? </div> </div> </div>
9	<p>In the Project Configuration page, navigate to Pipeline tab and select 'Pipeline script from SCM' from Definition drop-down.</p> <div> <div>Pipeline</div> <div> <div>Definition Pipeline script from SCM</div> <div> <div>SCM None</div> <div>Script Path Jenkinsfile</div> <div>Lightweight checkout <input checked="" type="checkbox"/></div> <div>Pipeline Syntax</div> <div> <div>Save</div> <div>Apply</div> </div> </div> </div> </div>
10	<ol style="list-style-type: none"> Select Git from SCM drop-down. Add Repository URL and credentials as shown below Check the Lightweight checkout box. <p>Note: Jenkinsfile.txt is available in the repository.</p>

	<div> <h3>Pipeline</h3> <p>Definition</p> <p>Pipeline script from SCM</p> <p>SCM ?</p> <p>Git</p> <p>Repositories ?</p> <p>Repository URL ?</p> <p>https://github.com/vishnukranreddy4/ansiblerepo.git</p> <p>Credentials ?</p> <p>- none -</p> <p>+ Add</p> <p>Advanced...</p> <p>Add Repository</p> <p>Branches to build ?</p> <p>Branch Specifier (blank for 'any') ?</p> <p>*/master</p> <p>Add Branch</p> <p>Repository browser ?</p> <p>(Auto)</p> <p>Additional Behaviours</p> <p>Add -</p> <p>Script Path ?</p> <p>Jenkinsfile.txt</p> </div> <p>d. Click on Save to save the configurations.</p>
<p>1</p> <p>1</p>	<div> <p>Execute Build and View Build results</p> <p>Click on Build Now to execute the job.</p> <div> <p>Dashboard ▸ Ansible_Pipeline ▾ ▸</p> <p>📈 Back to Dashboard</p> <p>🔍 Status</p> <p>📝 Changes</p> <p>🏠 Build Now</p> <p>⚙️ Configure</p> <p>🚫 Delete Pipeline</p> <p>🔍 Full Stage View</p> <p>📝 Rename</p> <p>❓ Pipeline Syntax</p> </div> </div>
<p>1</p> <p>2</p>	<p>Once the job is executed successfully, you can see the build status as shown below.</p>

Stage View

Average stage times:
(Average full run time: ~7s)

	Declarative: Checkout SCM	Get_Playbook	Run_Playbook
Average stage times	1s	1s	1s
Actual stage times	886ms	883ms	4s

#3 Sep 30 06:54 No Changes

- To view build results, click the build number under **Build History** of the job in the Jenkins dashboard.
- Click **Console Output**.
- This page will show all stages are executed successfully.

Back to Project

Status

Changes

Console Output

Edit Build Information

Delete build '#1'

Git Build Data

Sample Console Output:

	<pre> + ansible-playbook playbook.yml PLAY [all] ***** TASK [Gathering Facts] ***** ok: [172.32.6.144] TASK [hostname] ***** ok: [172.32.6.144] => { "ansible_hostname": "ip-172-32-6-144" } TASK [date and time] ***** ok: [172.32.6.144] => { "msg": ["Date: 2022-09-30", "Timezone: UTC", ""] } TASK [network info] ***** ok: [172.32.6.144] => { "msg": ["All Interface List: [u'eth0', u'lo', u'docker0', u'virbr0-nic', u'virbr0- "All IP: [u'172.17.0.1', u'172.32.6.144', u'192.168.122.1']", "Gateway: 172.32.0.1", "Eth0 MAC: 02:ae:7c:b0:8f:30", ""] } </pre>
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*** End of Activity Jenkins Pipeline ***

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